What is claimed is:

1. A transformant comprising the gene encoding the large subunit of glycerol dehydratase and/or diol dehydratase, the gene encoding the medium subunit thereof, and the gene encoding the small subunit thereof; the gene encoding the large subunit of the reactivation factor for glycerol dehydratase and/or the reactivation factor for diol dehydratase and the gene encoding the small subunit thereof; the gene encoding aldehyde dehydrogenase; and the gene encoding 1,3-propanediol oxidoreductase and/or the gene encoding propanol dehydrogenase.

2. The transformant according to claim 1, wherein the genes each encoding a subunit of glycerol dehydratase and/or diol dehydratase are derived from *Lactobacillus reuteri*.

3. The transformant according to claim 1 or 2, which comprises the gene encoding propanol dehydrogenase and said gene is derived from *Lactobacillus reuteri*.

4. The transformant according to any of claims 1 to 3, which comprises the gene encoding 1,3-propanediol oxidoreductase and said gene is derived from *Lactobacillus reuteri*.

5. The transformant according to any of claims 1 to 4, wherein the genes each encoding a subunit of the reactivation factor for glycerol dehydratase and/or the reactivation factor for diol dehydratase are derived from *Lactobacillus reuteri*.

6. The transformant according to claim 1, wherein the genes encoding aldehyde dehydrogenase is genes encoding propionaldehyde dehydrogenase, and said transformant further comprises the genes encoding phosphotransacylase and the genes encoding propionate kinase but does not comprise any gene encoding glycerol dehydrogenase.

7. The transformant according to claim 6, which comprises the pdu operon and no

gene encoding glycerol dehydrogenase.

8. Knockout bacteria, which are obtained by knocking out the gene encoding glycerol dehydrogenase from bacteria of the genera *Lactobacillus*, *Salmonella*, *Klebsiella*, *Listeria*, *Clostridium*, *Escherichia*, *Enterobacter*, *Caloramator*, *Acetobacterium*, *Brucella*, *Flavobacterium*, *Fusobacterium*, *Citrobacter*, or *Propionibacterium*.

9. Knockout bacteria comprising the pdu operon and the gene encoding phosphotransacylase, wherein the gene encoding glycerol dehydrogenase is knocked out.

10. A method for producing 1,3-propanediol and/or 3-hydroxypropionic acid by bringing the transformants or bacteria according to any one of claims 1 to 9 into contact with glycerol.